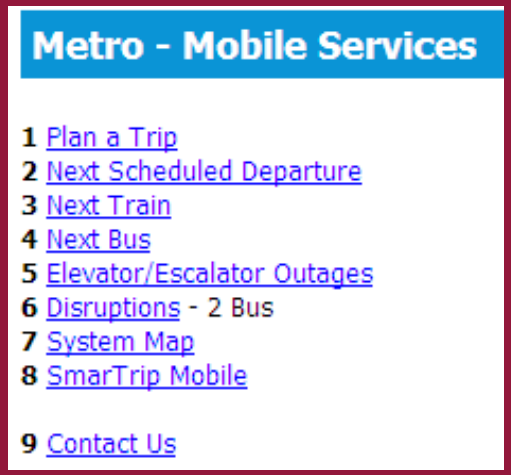
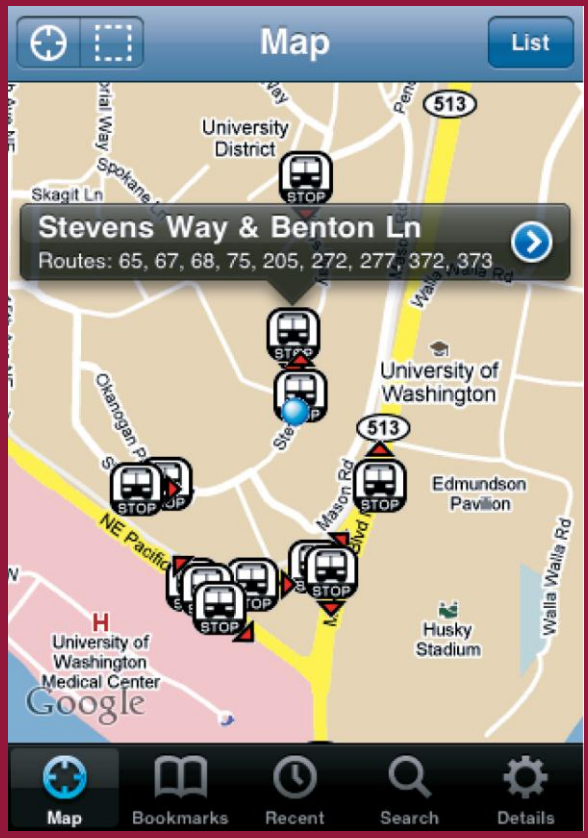
Mobile Device Technology for Real-Time Transit Information: Use and Deployment

Carol L. Schweiger,
Vice President

T3 Webinar

April 10, 2012





Presentation Outline

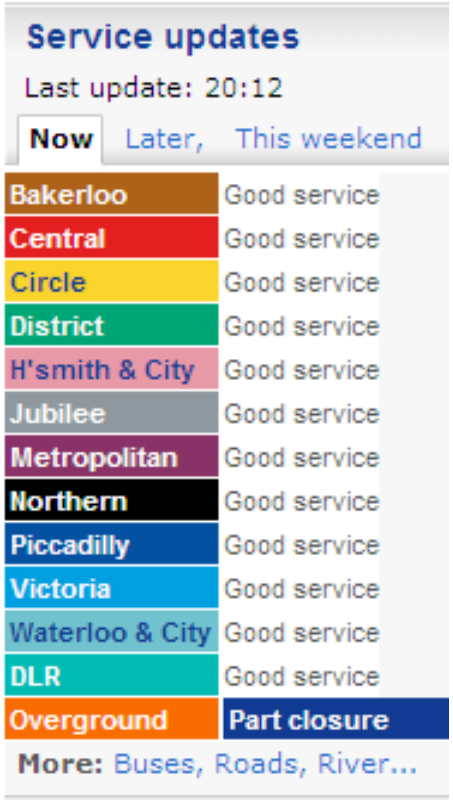
- Introduction
- Literature Review
- Characteristics of Underlying Technology, Mobile Technology and Mobile Information
- Contribution of Mobile Messaging to Agency Communications Strategy
- Selected Case Studies
- Findings, Lessons Learned and Conclusions

Introduction

- Dimensions of use and deployment of real-time transit information on mobile devices:
  - Underlying technology required to generate information disseminated on mobile devices
  - Mobile technology used for information dissemination
  - Characteristics of the information
  - Resources required to successfully deploy information
  - Contribution of mobile messaging to agency communications strategy
- Survey included dimensions and lessons learned
- Interviews with key personnel at agencies that have exemplary approaches to providing mobile information

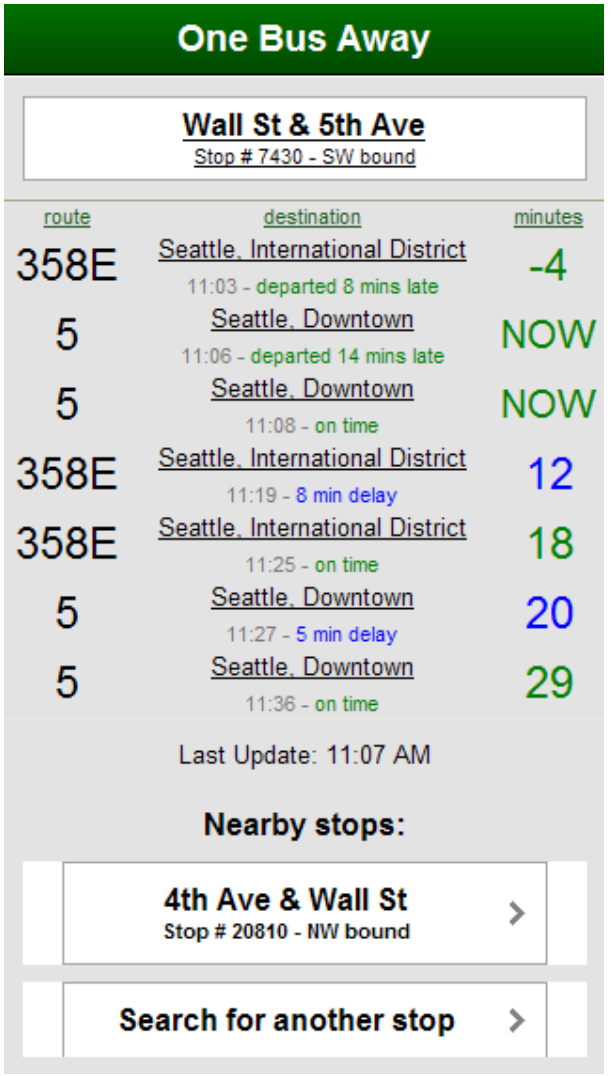
Literature Review

- Underlying technologies well understood
- Characteristics of mobile technology must be considered including:
  - Mobile messaging reliability and usability
  - Handset display dimensions
  - Memory and processing speed
  - Access to communications networks
- Deployment growing in U.S., but more deployment in Europe and Asia. However, “open data” more prevalent in U.S.
- Using mobile phone location and social networking is revolutionizing real-time information on mobile devices

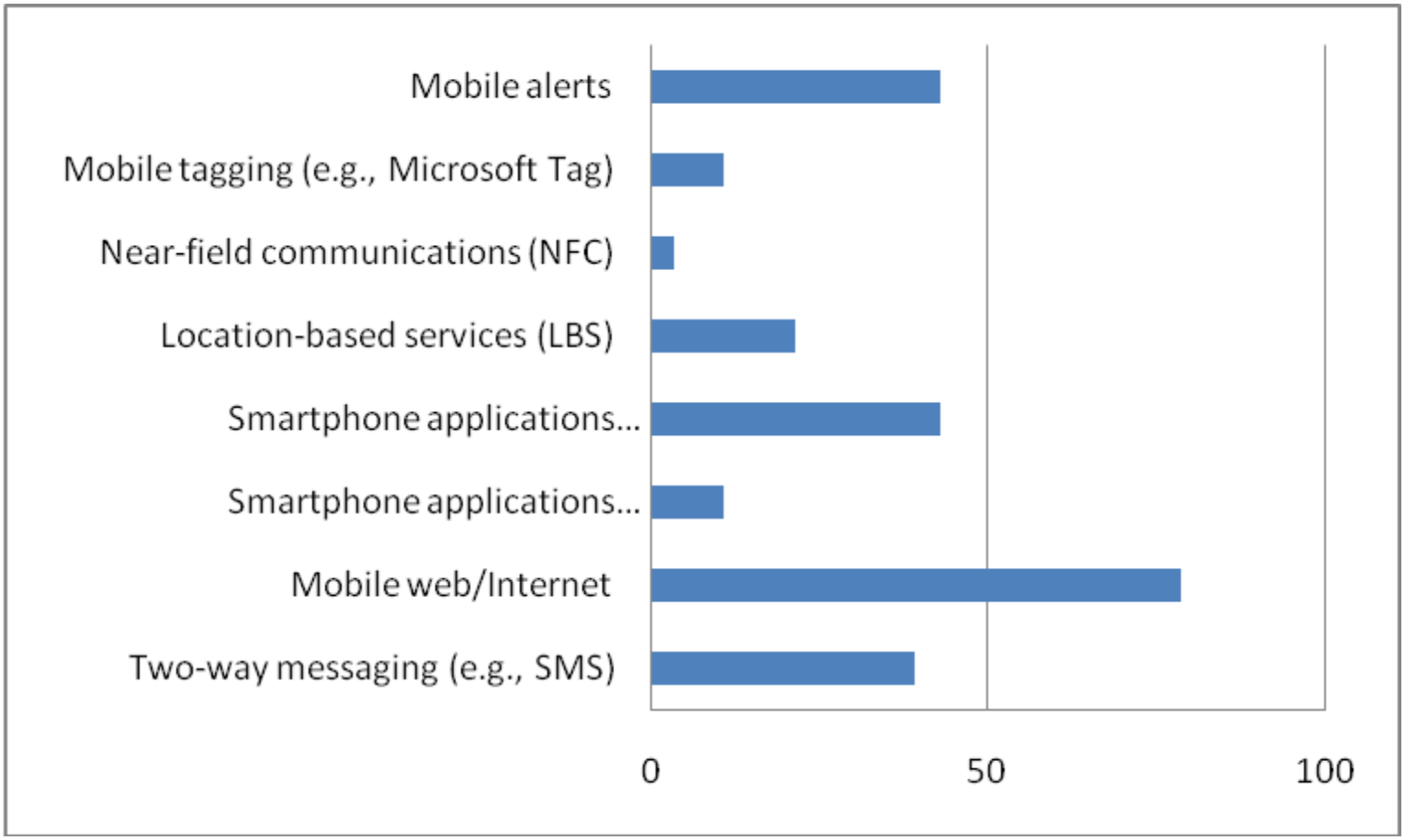


Underlying Technology and Real-time Mobile Message Types

- Most prevalent underlying technologies:
  - Real-time arrival prediction software (89%)
  - Automatic vehicle location (AVL) (82%)
  - Computer-aided dispatch (CAD) (64%)
  - Two-way messaging capability (57%)
  - Alert subscription system (46%)
  - Schedule adherence functionality (46%)
  - On-board data communication system (39%)
- Wide variation in types of real time information and frequency with which it is updated
- Very few conducted study to determine deployment



Mobile Technology



Characteristics of Real-time Information

- Similar formatting for SMS messages
- Mobile websites vary depending on how phone or smartphone screen real estate utilized
- Formats of third-party mobile applications vary greatly
- Selection of push vs. pull depends on use of information and customer's location in "trip chain" when accessing information
- Wide variety of standards:
  - Specific transit information
  - Formatting of the information
- Limited number of respondents monitor reliability and accuracy

Contribution of Mobile Messaging to Agency Communications Strategy

- 12 have communications strategy – 8 of 12 provide real-time information via mobile devices as part of that strategy
- 8 consider "information equity" when choosing specific media/channels
- 13 consider providing real-time information on mobile devices as a way to attract "choice" riders
- 7 developed marketing campaign
- Agencies' viewpoints regarding pursuing advertising revenue though mobile content were varied

Transit Board™ Real Time Info

Time	Route	Board at
8 min	MAX Blue Line to Hillsboro	Pioneer Square North MAX Station
9 min	MAX Red Line to Airport	Pioneer Square South MAX Station
15 min	MAX Red Line to City Center & Beaverton TC	Pioneer Square North MAX Station
19 min	MAX Blue Line to Gresham	Pioneer Square South MAX Station
23 min	MAX Blue Line to Hillsboro	Pioneer Square North MAX Station
24 min	MAX Red Line to Airport	Pioneer Square South MAX Station
36 min	MAX Blue Line to Gresham	Pioneer Square South MAX Station

Case Studies

- Tri-County Metropolitan Transportation District of Oregon (TriMet) (Portland, OR)
- Bay Area Rapid Transit District (BART) (Oakland, CA)
- Transport for London (TfL) (London, United Kingdom)
- LeeTran (Lee County/Ft. Myers, FL)

TriMet

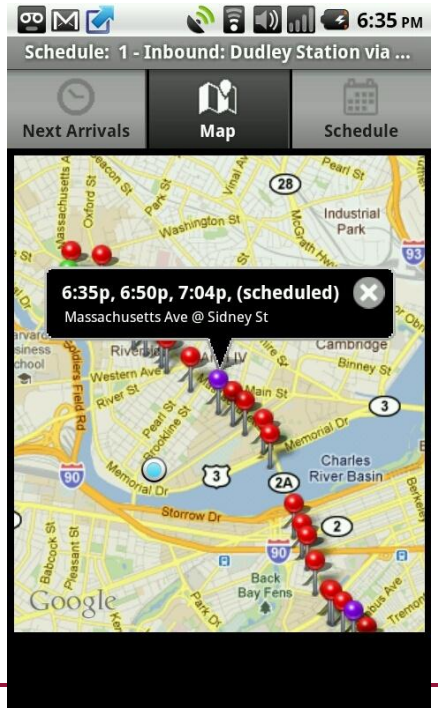
- Just prior to opening data, recognition that third-party developers could create innovative mobile applications at no cost to TriMet
- Created developer's website, recognizing value of both "good" data and developers of mobile applications
- Resources include:
  - Schedule published in General Transit Feed Specification (GTFS) format
  - Web services from TriMet's TransitTracker and trip planner systems
- Developers of TriMet mobile applications must register
- 44 third-party applications developed for TriMet, 30 of which are for mobile devices

Transport for London (TfL)

- Prior to June 2010, real-time information on mobile devices was limited to travel alerts
- Conducted demonstrations to test potential of mobile applications using real-time information:
  - Examine content that TfL already had and how it could be disseminated
  - Examine form or format in which content should be presented
  - Assess usefulness of providing content
  - Determine feasibility of developing such applications
- No funding to deploy most promising demonstrated applications
- Opened data in June 2010, resulting in new relationships between open data community and TfL/London's DataStore

Findings

- Growing trend toward deploying this technology for any size agency
- Using third-party to develop real-time applications and provide real-time information on mobile devices is overwhelmingly the approach that transit agencies are taking
- Costs are not well understood and discussed in a very limited way in the literature and survey responses
- Overall lessons learned shown on following slide



Lessons Learned

- Executive or Board sponsor is critical
- Architecture with central source of all real-time information recommended
- Source data needs to be verified thoroughly for reliability and accuracy
- Collecting usage statistics is important
- Useful to test on Internet first, then deploy on mobile website
- One service provider
- Strong relationships with communication providers and mobile device suppliers are critical
- “One customer” approach with one application very important driver

Conclusions

- Agency's ability to develop, manage and maintain mobile applications in-house or manage 3rd application development and services critical
- Very strong relationship necessary between open data approach and resources
- Mobile devices more prevalent than use of other more traditional dissemination media
- Not all existing and potential customers will have mobile devices, and not all applications will satisfy needs of all customers
- Personalization of information critical to success of providing information on mobile devices

Thank You!

For additional information:

Carol Schweiger, Vice President

TranSystems Corporation

Phone: +1 857-453-5511

E-mail: clschweiger@transystems.com

Welcome to CARTA Bus Tracker

Choose your route:

- 1 - 1 ALTON PARK
- 2 - 2 NORTH CHATTANOOGA
- 4 - 4 EASTGATE/HAMILTON PL
- 7 - 7 CHATTANOOGA HOUSING AUTHORITY
- 8 - 8 EASTDALE
- 9 - 9 EAST LAKE
- 10A - 10A AVONDALE
- 10C - 10C CAMPBELL
- 10G - 10G GLENWOOD
- 13 - 13 ROSSVILLE
- 14 - 14 MOCS EXPRESS
- 15 - 15 ST. ELMO
- 16 - 16 NORTHGATE
- 19 - 19 CROMWELL ROAD
- 21 - 21 GOLDEN GATEWAY
- 28 - 28 AMNICOLA HWY CHATT STATE
- 33 - 33 DOWNTOWN SHUTTLE
- 34 - 34 NORTH SHORE SHUTTLE

- Sign in to Bus Tracker
- Create a Bus Tracker account

- What is Bus Tracker?
- Questions or Comments?

- Home
- Help

Copyright 2010 Chattanooga Area Regional Transportation Authority
Contact Us